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ABSTRACT

In this collection of essays, the content of mathematics is dealt with in general terms, concentrating on cognitive organization, modes of thought, and the way that mathematics interacts with the sociocultural setting. Chapter 1 compares features of Sumero-Babylonian, ancient Greek, and Latin medieval mathematics. Chapter 2 traces the specific character and history of pre-Modern practitioners' mathematics. Chapter 3 investigates the interplay between state formation processes, scribal culture, and mathematics in ancient Mesopotamia. Chapter 4 explores the specific character of Islamic mathematics and the sociocultural roots of its accomplishments. Chapter 5 asks to what extent formal philosophies and quasi-philosophical attitudes influence the aims and ideals pursued by mathematicians from the early 12th- through the late 16th century. Chapter 6 studies the 13th-century mathematical author Jordanus de Memore through his works, tracing how he oriented himself with regard to the contradictory currents and attitudes that surrounded him. Chapter 7 scrutinizes the common persuasion that Platonism was a decisive motive force in the development of Renaissance mathematics, suggesting the alternative thesis that the dominant ideology of humanist mathematics can be characterized as Archimedism. Chapter 8 focuses on the character and setting of Modern and contemporary mathematics through the perspective defined by the impact of militarization and warfare on mathematics. Implications for teaching are considered. Contains 807 references and name and subject indexes. (MKR)

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